REMARKS

I. Election / Restrictions

Applicant hereby affirms the election to prosecute the claims 1-24 of Invention I without traverse. Applicant cancels the non-elected claims. Applicant hereby reserves the right to file divisional applications on the non-elected claims, Invention II (claims 25-46).

II. Objection to Abstract

Examiner has objected to the abstract of the disclosure according to MPEP § 608.01(b) as not consistent with the elected invention and not fully descriptive. Applicant amends the abstract herein to address Examiner's objections. Support for amendment to abstract can be found at page 3, lines 6-9; page 4, line 17 and 23-24; page 5, lines 3-5 and 16-18 and in claim 1.

III. Claim Objections/Rejections under 35 U.S.C. 112

Use of trademark TYZOR™

Applicant gratefully acknowledges Examiner's noting use of trademark TYZOR™. Applicant has amended specification to accompany uses with the generic terminology, "organic titanate".

Informalities

Examiner has objected to Claims 2, 6, 7, 16, 19 and 20 due to informalities. To address these informalities, Applicant has amended claims as follows. In claim 2, line 4, and claim 16, line 3, Applicant deletes comma after "methyl" and "dimethyl". In claim 2, line 5, and claim 16, line 4, Applicant deletes "tri-isoproanolamine" and replaces with "tri-isopropanolamine". In claim 6, line 1 and claim 19, line 2, Applicant inserts the indefinite article "a" before "tris-phosphite ester". In claim 7, line 4, and at the beginning of line 5 in claim 20, Applicant has deleted the comma between "diylbis-" and "tetrakis". Applicant also deletes the first open parenthesis in claim 7, at the beginning of line 5, and in claim 20, line 5, before "tris-(2,4-di-t-butyl) phosphite".

Rejection under 35 U.S.C. 112, first paragraph

Examiner rejects claims 1-24 under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for the titanium species to be titanium metal. To address this rejection, Applicant has deleted "titanium or" from claims 1 and 2.

Rejection under 35 U.S.C. 112, second paragraph

Examiner rejected claims 1-24 under 35 U.S.C. 112, second paragraph for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, Examiner notes Claims 10-12, 18, 23 and 24 contain the trademark/trade names TYZOR with various suffixes. Applicant has amended these claims to

delete the trademarks; generic descriptions of the trademark compositions remain in these claims.

Examiner rejects claims for being indefinite which contain broad language followed by "such as" and then narrow language. Examiner also objects to broad recitation of ingredients followed by "which is" and then narrower descriptions of ingredients. Applicant has amended claim 1 to indicate the narrower descriptions are required features of the claim by reciting "wherein said complexing agent is an alkanolamine" and "wherein said alkanolamine optionally contains one or more hydroxyalkyl groups". Support can be found at page 4, lines 17-19. Claim 1 has been further amended to recite "wherein each R individually has 1 to about 30 carbon atoms per radical" in regards to zirconium formula of $Zr(OR)_4$.

Applicant also amends claims 2, 10-12, 19-21, 23 and 24 to more particularly point out that the narrower descriptions are required features of the claim. Claim 2 recites "wherein said complexing agent is ethanolamine, diethanolamine, triethanolamine, methyl diethanolamine, dimethyl ethanolamine, tri-isopropanolamine, or combinations of two or more thereof." Claims 10-12 have been amended to require that the stabilizer is limited to those specifically recited, "wherein said stabilizer is tetrapropyl zirconate, tetrabutyl zirconate, tetrakis(triethanolamino) zirconate, or combinations of two or more thereof". Claims 19-21 have also been amended to require that the stabilizer is limited to those specifically recited. Claims 23 and 24 have also been amended to require that the stabilizer is limited to those specifically recited, "wherein said stabilizer is tetrapropyl zirconate, tetrabutyl zirconate, tetrakis(triethanolamino) zirconate, or combinations of two or more thereof.".

Applicant is not clear on reference to Examiner's suggestion to write out the formula of the phosphorous acid in claims 7 and 20. The referenced phosphorous compound in not phosphorous acid, but the ester, "phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-,tetrakis(2,4-bis(1,1-dimethylethyl)phenyl)ester". Applicant respectfully directs Examiner to location of the semicolons, which separate the esters being specified. Phosphorous acid has the formula $(HO)_2HP{=}O$, and is *not* included within the scope of the claims.

IV. Other amendments to claims

Applicant further amends claim 1 to recite stabilizer comprises a phosphorus-containing ester containing no free P-OH group, a zirconium chelate comprising or produced from $Zr(OR)_4$ and said complexing agent, or combinations thereof wherein each R individually has 1 to about 30 carbon atoms per radical. When the stabilizer is a zirconium compound, it is a zirconium chelate. See Runs 12-15 (page 13, Table 2 and page 14, lines 4-6) in specification. In Run 12, a zirconium compound that is not a chelate is used and high color results in esterified product of terephthalic acid and 1,4-butanediol. In Runs 13-15, the stabilizer is a zirconium chelate and ester product has good color.

Claims 9 and 22 have been amended to recite the stabilizer is said zirconium chelate. Claims 10-12 and 23-24 have also been amended to restrict stabilizer to zirconium chelate of the list, which is tetrakis(triethanolamine) zirconate.

Claims 8, 12 and 21have been amended to add missing period "." at end of each of these claims.

V. Rejections under 35 U.S.C. § 102

USP 6,166,170, "Putzig I"

Examiner rejects claims 1-4, 9-12, 15-17, 2 and 23 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,166,170 ("Putzig I"). Examiner asserts Putzig I discloses the invention as claimed in the abstract; at col. 2, lines 44-64; col. 3, lines 9-19, 38-56 and in Example 10. Applicant respectfully disagrees.

Applicant's invention is a composition comprising or produced from (1) a stabilizer and (2) either (a) a titanium compound and a complexing agent or (b) a titanium chelate. Optionally a solvent is present in the composition. The complexing agent is an alkanolamine, optionally containing one or more hydroxyalkyl groups. The stabilizer comprises (1) a phosphorus-containing ester containing no free P-OH groups, (2) a zirconium chelate comprising or produced from Zr $(OR)_4$ and said complexing agent (i.e., an alkanolamine, optionally containing one or more hydroxyalkyl groups) or combinations thereof wherein each R individually has 1 to about 30 carbon atoms.

Putzig I discloses in the abstract a composition comprising a titanium compound, a complexing agent, hypophosphorous acid or its metal salt, water and optionally a solvent. According to Putzig I, the complexing agent can be hydroxycarboxylic acid, alkanolamines, aminocarboxylic acids, or combinations of two or more thereof. The abstract fails to discloses a stabilizer which comprises (1) a phosphorus-containing ester containing no free P-OH groups, (2) a zirconium chelate comprising or produced from Zr $(OR)_4$ and said complexing agent (i.e., an alkanolamine, optionally containing one or more hydroxyalkyl groups) or (3) combinations thereof wherein each R individually has 1 to about 30 carbon atoms. More specifically, Putzig I abstract fails to disclose any one or combination of the stabilizer components.

Putzig I discloses at col. 2, lines 44-64 that preferred titanium compounds are organic titanium compounds, such as tetrahydrocarbyloxides, having formula of $Ti(OR)_4$. Putzig I discloses at col. 3, lines 9-19 that the titanium tetrahydrocarbyloxide can be combined with a zirconium compound. The zirconium compound is specified at Putzig I col. 3, line 12 to be a zirconium tetrahydrocarbyloxide. Applicant's amended claims specify when the stabilizer is a zirconium compound it is a zirconium chelate (with support in Examples, Runs 12-15, as discussed above). The combination of a chelated titanium compound with a non-chelated zirconium compound (Run 12) does not provide acceptable color in the esterification process. There is no disclosure in Putzig I to combine the zirconium tetrahydrocarbyloxide with a chelating agent or that such combination would improve results when used as in esterification.

Putzig I discloses at col. 3, lines 38-56, that titanium compound include tetra isopropyl titanate and tetra n-butyl titanate and that complexing agents include alkanolamines. Putzig I discloses combining titanium compounds with complexing agents but fails to disclose combining zirconium tetrahydrocarbyloxide with a complexing (or chelating) agent.

Example 10 of Putzig I discloses combining TYZOR® TPT organic titanate (tetra isopropyl titanate) with triethanolamine and aqueous hypophosphorous acid. There is no disclosure of adding a phosphorus-containing ester containing no free P-OH groups, and/or a zirconium chelate comprising or produced from Zr $(OR)_4$ and said complexing agent.

Thus, Putzig I fails to disclose Applicant's invention as defined in the amended claims.

USP 6,489,433, "Duan"

Examiner rejects claims 1-4, 9-12, 15-17, 22 and 23 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,489,433 ("Duan"). Examiner asserts Duan discloses the invention as claimed in the abstract; at col. 2, lines 42-62; col. 3, lines 5-38; col. 5, lines 28-52. Applicant respectfully disagrees.

Applicant's invention is described above under discussion of Putzig I. Duan fails to disclose Applicant's invention. Duan discloses in the abstract, a catalyst composition which comprises or is produced by combining (A) a titanium compound; (B) either (i) a complexing agent, (ii) a combination of a complexing agent, a hypophosphorous acid or salt thereof and optionally a solvent, a zirconium compound, or both, or (iii) combinations thereof; (C) a phosphorous compound and optionally a solvent. The abstract fails to discloses a stabilizer which comprises (1) a phosphorus-containing ester containing no free P-OH groups, (2) a zirconium chelate comprising or produced from Zr $(OR)_4$ and said complexing agent (i.e., an alkanolamine, optionally containing one or more hydroxyalkyl groups) or (3) combinations thereof wherein each R individually has 1 to about 30 carbon atoms. More specifically, Duan abstract fails to disclose any one or combination of the stabilizer components.

Duan discloses at col. 2, lines 42-62, preferred titanium compounds which are tetrahydrocarbyloxides. Duan discloses at col. 3, lines 5-8 to combine the titanium compound with a zirconium tetrahydrocarbyloxide. Duan discloses at col. 3, lines 16-29 different complexing agents. However Duan fails to disclose combining a titanium compound with a zirconium chelate and that superior results for such composition can be achieved in esterification processes. As stated above, Applicant's amended claims specify when the stabilizer is a zirconium compound it is a zirconium chelate (with support in Examples, Runs 12-15, as discussed above). There is no disclosure in Duan to combine the zirconium tetrahydrocarbyloxide with a chelating agent or that such combination would improve results when used as in esterification.

Duan discloses at col. 5, lines 28-52, use of solubility promoters, which may include zirconium compounds, $Zr(OR)_4$. These compounds are defined as alkyl zirconates, not as zirconium chelates.

Thus, Duan fails to disclose Applicant's invention as defined in the amended claims.

USP 6,066,714, "Putzig II"

Examiner rejects claims 1, 2, 5, and 15-17 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,066,714 ("Putzig II"). Examiner asserts Putzig II discloses the invention as claimed in the abstract; at col. 2, lines 22-48; col. 3, lines 37-63; Examples 1-3 and 5; and Control B). Applicant respectfully disagrees.

Putzig II discloses in the abstract a composition comprising a titanium compound, a phosphorus compound, an amine, a solvent, and an optional co-catalyst. The phosphorus compound has the of $(R^3O)_x(PO)(OH)_{3-x}$ or $(R^3O)_y(P_2O_5)(OH)$. Each phosphorus compound contains at least one P-OH group – in contrast to suitable phosphorus compounds in Applicant's amended claim. The co-catalyst is cobalt/aluminum, antimony, or combinations thereof. Therefore, the abstract of Putzig II fails to disclose any stabilizer component of Applicant's amended claims.

Putzig II discloses at col. 2, lines 22-48 the titanium compound is a titanium tetrahydrocarbyloxide and that the titanium compound may have multidentate ligands such as triethanolamine.

Putzig II discloses at col. 3, lines 37-63 suitable phosphorus compounds which are various phosphates of formulae provided above. These compounds are not a phosphite ester containing no free P-OH groups as required in Applicant's claims. Phosphites of Applicant's claims are different from the phosphates discloses by Putzig II.

Putzig II discloses in Example 1 combining tetraisopropyl titanate with ZELEC TY acid phosphation mass (phosphate within defined phosphorus compound of Putzig II – NOT phosphite ester containing no free P-OH groups as recited in Applicant's claims). Amine compound, 2[2-(dimethylamino)ethoxy]ethanol, is then added. Thus, Putzig II Example 1 fails to disclose composition of Applicant's claim 1 as no stabilizer is provided.

Putzig II discloses in Example 2 combining tetraisopropyl titanate with ZELEC TY acid phosphation mass (like Example 1) with diethanolamine. Putzig II Example 2 fails to disclose composition of Applicant's claim 1 as no stabilizer is provided.

Putzig II discloses in Examples 3 and 5 combining the same components in different amounts as those in Example 1. Putzig II Examples 3 and 5 fail to disclose composition of Applicant's claim 1 as no stabilizer is provided.

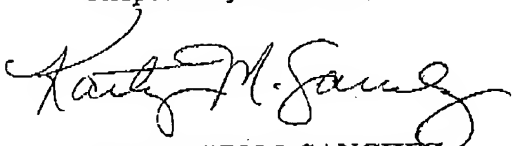
Putzig II discloses in Control B combining tetraisopropyl titanate with a mixed butyl phosphate. Again, the phosphate added in this Control is not a phosphite ester containing no free P-OH groups as recited in Applicant's claims.

Thus, Putzig II fails to disclose Applicant's invention as defined in the amended claims.

CONCLUSION

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,



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